

|                                                                                                  |                                                                                                                               |                                                          |                                                                                                                                                                                                                                                                                                                 |                               |                          |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------|
| The Proposal Identification                                                                      |                                                                                                                               | 01_0051                                                  |                                                                                                                                                                                                                                                                                                                 |                               |                          |
| Project Title                                                                                    |                                                                                                                               | Mapping [CII] emission in the NGC2023 reflection nebula. |                                                                                                                                                                                                                                                                                                                 |                               |                          |
| Principle Investigator                                                                           |                                                                                                                               | G. Sandell                                               | Goran.H.Sandell@nasa.gov                                                                                                                                                                                                                                                                                        |                               |                          |
| SMO contact person                                                                               |                                                                                                                               | G. Sandell                                               | gsandell@sofia.usra.edu                                                                                                                                                                                                                                                                                         |                               |                          |
| GREAT processing liaison                                                                         |                                                                                                                               | M. Requena (MPIfR)                                       | mrequena@mpifr-bonn.mpg.de                                                                                                                                                                                                                                                                                      |                               |                          |
|                                                                                                  |                                                                                                                               |                                                          |                                                                                                                                                                                                                                                                                                                 |                               |                          |
| Observations                                                                                     |                                                                                                                               |                                                          |                                                                                                                                                                                                                                                                                                                 |                               |                          |
| Mission Identification                                                                           |                                                                                                                               | 2014-02-04-GR_F142                                       |                                                                                                                                                                                                                                                                                                                 |                               |                          |
| Flight date                                                                                      |                                                                                                                               | 2014 Feb 04                                              |                                                                                                                                                                                                                                                                                                                 |                               |                          |
| GREAT configuration <sup>(1)</sup>                                                               |                                                                                                                               | front-ends: L1 & L2                                      |                                                                                                                                                                                                                                                                                                                 | back-ends: AFFT spectrometers |                          |
| Astronomical Sources                                                                             |                                                                                                                               | HD37903                                                  | Scans:                                                                                                                                                                                                                                                                                                          | 10066-10079                   | lines: CO (11-10), [CII] |
|                                                                                                  |                                                                                                                               |                                                          |                                                                                                                                                                                                                                                                                                                 |                               |                          |
| Mission Identification                                                                           |                                                                                                                               | 2014-02-04-GR_F143                                       |                                                                                                                                                                                                                                                                                                                 |                               |                          |
| Flight date                                                                                      |                                                                                                                               | 2014 Feb 05                                              |                                                                                                                                                                                                                                                                                                                 |                               |                          |
| GREAT configuration <sup>(1)</sup>                                                               |                                                                                                                               | front-ends: L1 & L2                                      |                                                                                                                                                                                                                                                                                                                 | back-ends: AFFT spectrometers |                          |
| Astronomical Sources                                                                             |                                                                                                                               | HD37903                                                  | Scans:                                                                                                                                                                                                                                                                                                          | 10170-10192                   | lines: CO (11-10), [CII] |
|                                                                                                  |                                                                                                                               |                                                          |                                                                                                                                                                                                                                                                                                                 |                               |                          |
| Calibrated data products based on: kosma_calibrator ver. Oct 2013, GILDAS software ver. Apr 2014 |                                                                                                                               |                                                          |                                                                                                                                                                                                                                                                                                                 |                               |                          |
| product level                                                                                    | file name                                                                                                                     |                                                          | description                                                                                                                                                                                                                                                                                                     |                               |                          |
| 3a                                                                                               | Cycle1_GR_OT_01_0051_GSandell_2_Ta.great<br>Cycle1_GR_OT_01_0051_GSandell_2_Tmb.great                                         |                                                          | Calibrated to T <sub>A</sub> * scale (η <sub>f</sub> = 0.97).<br>Calibrated <sup>(1)</sup> to T <sub>mb</sub> scale, η <sub>mb</sub> = 0.67 (L1), 0.62 (L2).<br>Independent fit of dry & wet atmosphere. All scans quality validated.                                                                           |                               |                          |
| 3b                                                                                               | Cycle1_GR_OT_01_0051_GSandell_2_CII.lmv<br>Cycle1_GR_OT_01_0051_GSandell_2_CO.lmv<br>Cycle1_GR_OT_01_0051_GSandell_2_aver.lmv |                                                          | Created with Cycle1_GR_OT_01_0051_GSandell_2.class<br>1 <sup>st</sup> order spectral baselines removed. Gridded maps for the two transitions and – where applicable - averaged spectra for single positions (1/σ <sub>rms</sub> <sup>2</sup> weighting of individual spectra, σ <sub>rms</sub> baseline noise). |                               |                          |

Notes: (1) Heyminck, S., et al.: GREAT: the SOFIA high-frequency heterodyne instrument. Astron.Astrophys. 542, L1 (2012)

(2) Guan, X., et al.: GREAT/SOFIA atmospheric calibration. Astron.Astrophys. 542, L4 (2012)